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(72) Inventors:
• **ZHANG, Ziran**
Fujian, 361010 (CN)
• **WANG, Weiteng**
Fujian, 361010 (CN)
• **XU, Deshun**
Fujian, 361010 (CN)

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(74) Representative: **Von Rohr Patentanwälte Partnerschaft mbB**
Rüttenscheider Straße 62
45130 Essen (DE)

(71) Applicant: **Leedarson Lighting Fixtures Co., Ltd**
Zhangzhou, Fujian 363999 (CN)

(54) **LAMP TRIM AND LAMP MODULE**

(57) The present disclosure relates to a lamp trim and a lamp module, and relates to the technical field of illuminating lamps. After the lamp trim provided in the present disclosure is assembled into one piece with the lamp body, as the lamp body is subjected to an elastic acting force in a direction perpendicular or parallel to the axis of the lamp body, reliable fixation of the lamp body can be ensured; moreover, due to the elastic deformation of the elastic engaging part, the lamp trim is applicable

to lamp bodies with lamp body outer walls of different diameters or lamp bodies with installation convex edges of different thicknesses; the problem that some other lamp installation structures merely can match the lamp body of one size is solved, only a few types of lamp trims need to be produced, and can be universally used for lamp bodies of most sizes, thus it can facilitate processing and production as well as inventory management, and save the cost.

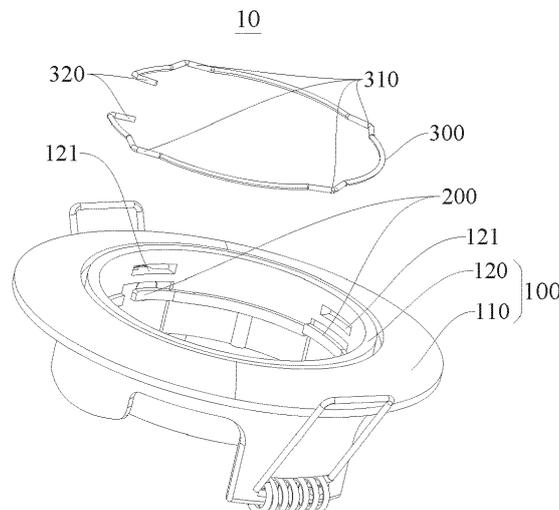


FIG. 1

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Description

Cross-reference to Related Applications

[0001] The present disclosure claims priority of Chinese patent application with the filing number 2019217468708 filed on October 17, 2019 with the Chinese Patent Office and entitled "Lamp Trim and Lamp Module", and Chinese patent application with the filing number 2019217476314 filed on October 17, 2019 with the Chinese Patent Office and entitled "Trim Structure and Lamp", the contents of which are incorporated herein by reference in entirety.

Technical Field

[0002] The present disclosure relates to the technical field of illumination lamps, and particularly provides a lamp trim and a lamp module.

Background Art

[0003] Some common structural forms of lamps with embedded installations are as follows: a lamp main body is fixedly mounted in a lamp trim, and is installed in an embedded manner by the lamp trim and holes at installation positions. The lamp main body generally has a bowl-shaped outer wall configured to reflect light, a boss configured to be snap-fit is provided on a periphery of a light-emitting end face, and the purpose of mounting the lamp main body on the trim can be achieved by fixation of the boss and the outer wall of the lamp main body.

[0004] However, different lamp main bodies generally have different thicknesses of bosses and different diameters of outer walls, therefore, one type of trim usually only adapts to one type of lamp main body, consequently, various sizes and types of trims need to be correspondingly produced, which not only results in a low efficiency of production and fabrication, but also a difficulty in inventory management, and high costs of processing and production.

Summary

[0005] An object of the present disclosure is to provide a lamp trim and a lamp module for solving the problem that some lamp trims cannot be universally used for lamp bodies having different sizes.

[0006] In order to achieve at least one of the above objects, a technical solution adopted in the present disclosure is as follows:

An embodiment of the present disclosure provides a lamp trim, including:

a trim body, configured to be sleeved on a lamp body outer wall of a lamp body; an elastic engaging part, provided on an inner wall of the trim body, wherein the elastic engaging part is elastically deformable

perpendicularly to an axis of the trim body, from of the trim body a center towards a peripheral direction, and is also elastically deformable in an axis direction of the trim body; a first side surface of the elastic engaging part facing the center of the trim body is configured to abut against the lamp body outer wall, and a second side surface of the elastic engaging part facing an opening portion of the trim body is configured to abut against an installation convex edge of the lamp body; the inner wall of the trim body is further provided with an engagement groove which is located between the elastic engaging part and the opening portion of the trim body; and

an engagement ring, snapped into the engagement groove, wherein the engagement ring is configured to abut against the installation convex edge, and the installation convex edge is located between the elastic engaging part and the engagement ring.

[0007] Optionally, as a possible implementation, the elastic engaging part includes a plurality of elastic engaging arms circumferentially arranged at intervals along the inner wall of the trim body, wherein each of the elastic engaging arms includes a first end and a second end opposite to each other, the first end is fixedly connected with the inner wall of the trim body, the second end suspends and extends towards the center of the trim body, and the second end is bent towards the opening portion of the trim body.

[0008] Optionally, as a possible implementation, the engagement groove is formed by a plurality of engagement holes circumferentially provided at intervals along the inner wall of the trim body; and

a plurality of snap-fit portions are circumferentially provided on the engagement ring at intervals, each of the snap-fit portions protrudes towards a direction away from the center of the engagement ring, and the plurality of snap-fit portions are respectively snapped into a plurality of the engagement holes.

[0009] Optionally, as a possible implementation, the snap-fit portions are bent sections provided on the engagement ring, and the bent sections protrude towards the direction away from the center of the engagement ring.

[0010] Optionally, as a possible implementation, the engagement ring is provided with a fracture, and two ends of the engagement ring are bent from the fracture position towards the center of the engagement ring and extend to serve as operation portions. Optionally, as a possible implementation, the engagement ring is provided with an end port, and a positioning portion and a fastening portion are respectively provided at two ends of the engagement ring; and

the positioning portion cooperates with the fastening portion so that the two ends of the engagement ring are in snap-fit connection.

[0011] Optionally, as a possible implementation, the

trim body includes:

an inner ring, configured to be sleeved on the lamp body outer wall, and both the elastic engaging part and the engagement groove are arranged on the inner wall of the inner ring; and

an outer ring, sleeved on the outer wall of the inner ring, wherein the outer ring is further configured to be embedded into a wall or a ceiling.

[0012] Optionally, as a possible implementation, the inner ring is in rotational connection with the outer ring, and a rotation axis of the inner ring is perpendicular to a central axis of the outer ring.

[0013] Optionally, as a possible implementation, an inner wall of the outer ring is provided with two rotating shafts at interval, and axes of the two rotating shafts coincide with each other and pass through the center of the outer ring; and

the side wall of the inner ring is provided with two shaft holes at interval, and the two shaft holes are respectively in rotational connection with the two corresponding rotating shafts.

[0014] Optionally, as a possible implementation, the inner wall of the outer ring is provided with a plurality of limiting grooves, wherein the plurality of limiting grooves are distributed in a sector shape on a periphery of one of the rotating shafts; and

the outer wall of the inner ring is provided with a position block, and the position block is configured to be snap-fitted with one of the limiting grooves.

[0015] Optionally, as a possible implementation, peripheries of the two rotating shafts are each provided with a plurality of limiting grooves, the outer wall of the inner ring is provided with two position blocks at interval, and the two position blocks are respectively configured to be snap-fitted with the limiting grooves located on the peripheries of the two rotating shafts.

[0016] Optionally, as a possible implementation, an opening portion of each of the limiting grooves is provided with first round corners; and an end of each position block snapped into the respective limiting groove is provided with second round corners.

[0017] Optionally, as a possible implementation, the outer ring, the limiting grooves and the rotating shafts are integrally molded; and the inner ring, each position block and the shaft holes are integrally molded.

[0018] Optionally, as a possible implementation, the elastic engaging part, the engagement groove and the inner ring are in an integrally molded structure.

[0019] An embodiment of the present disclosure further provides a lamp module, including a lamp body and the above lamp trim, wherein the lamp trim is sleeved on the lamp body outer wall of the lamp body.

Brief Description of Drawings

[0020]

5 FIG. 1 is a structural schematic view of a lamp trim provided in the present disclosure;

FIG. 2 is a top schematic view showing a structure of a trim body used in the present disclosure;

10 FIG. 3 is a partial view from a direction A in FIG. 2;

FIG. 4 is an exploded structural view of a lamp module provided in the present disclosure;

15 FIG. 5 is an exploded structural view of the trim body provided in the present disclosure;

20 FIG. 6 is a schematic view of an assembly structure of the trim body provided in the present disclosure;

FIG. 7 is a structural schematic view of limit grooves of an outer ring adopted in the present disclosure;

25 FIG. 8 is a structural schematic view of a position block of an inner ring adopted in the present disclosure;

30 FIG. 9 is another schematic view of a cooperation structure for the outer ring and the inner ring provided in the present disclosure;

FIG. 10 is a partial enlarged view of A in FIG. 9;

35 FIG. 11 is an exploded structural view of a lamp module provided in the present disclosure; and

40 FIG. 12 is a perspective structural view of the lamp module provided in the present disclosure.

[0021] In the drawings: 10-lamp trim; 100-trim body; 110-outer ring; 111-rotating shaft; 112-limit groove; 1121-first round corner; 1122-first resisting surface; 120-inner ring; 121-engagement hole; 122-shaft hole; 123-position block; 1231-second round corner; 1232-second resisting surface; 200-elastic engaging part; 210-first side surface; 220-second side surface; 300-engagement ring; 310-snap-fit portion; 320-operation portion; 50-lamp body; 501-installation convex edge; 502-lamp body outer wall.

Detailed Description of Embodiments

45 **[0022]** Hereinafter, only some exemplary embodiments are simply described. As recognizable by those skilled in the art, the embodiments described could be modified in various different manners without departing from the spirit or scope of the present disclosure. There-

fore, the accompanying drawings and the description are considered as essentially exemplary rather than restrictive.

[0023] In the description of the present disclosure, it should be understood that orientation or positional relations indicated by terms "center", "longitudinal", "transverse", "length", "width", "thickness", "up", "down", "front", "back", "left", "right", "vertical", "horizontal", "top", "bottom", "inner", "outer" and so on are based on orientation or positional relations as shown in the accompanying drawings, merely for facilitating the description of the present disclosure and simplifying the description, rather than indicating or implying that related devices or parts have to be in the specific orientation or configured and operated in a specific orientation, therefore, they should not be construed as limitation on the present disclosure. In the description of the present disclosure, "multiple (a plurality of)" means two or more, unless otherwise defined explicitly.

[0024] In the description of the present disclosure, it should be noted that unless otherwise specified and defined explicitly, terms such as "mount", "join", and "connect" should be construed in a broad sense, for example, it may be fixed connection, detachable connection, or integral connection; it may be mechanical connection, and also may be electrical connection or mutual communication; it may be direct connection, indirect connection through an intermediary, or internal communication between two elements or interaction between two elements. For those ordinarily skilled in the art, specific meanings of the above-mentioned terms in the present disclosure can be understood according to specific circumstances.

[0025] In the present disclosure, unless otherwise specified and defined explicitly, a first feature being "above" or "below" a second feature may include the first feature and the second feature being in direct contact, and also may include the first feature and the second feature being in contact through another feature therebetween instead of being in direct contact. Moreover, the first feature being "on", "above" or "over" the second feature includes the first feature being right above or not right above the second feature, or merely means the level of the first feature being higher than that of the second feature. The first feature being "under", "below" or "beneath" the second feature includes the first feature being directly below or not directly below the second feature, or merely means the level of the first feature being lower than that of the second feature.

[0026] The following disclosure provides many different embodiments or examples for implementing different structures of the present disclosure. In order to simplify the present disclosure, parts and configurations of particular examples are described below. Of course, they are merely exemplary, and are not intended to limit the present disclosure. In addition, the present disclosure may repeat reference numerals and/or reference letters in different examples. Such repetition is for the purpose of simplicity and clarity, and does not itself indicate rela-

tionship between various embodiments and/or settings discussed.

[0027] Some embodiments of the present disclosure are described below in combination with the accompanying drawings, and it should be understood that some embodiments described herein are merely used to describe and illustrate the present disclosure, and are not intended to limit the present disclosure.

[0028] Referring to FIG. 1 to FIG. 4 in combination, a lamp trim 10 provided in the present disclosure is exemplarily described. In an embodiment, the lamp trim 10 may include a trim body 100, an elastic engaging part 200 and an engagement ring 300, wherein the trim body 100 is configured to be sleeved on a lamp body outer wall 502 of a lamp body 50; the elastic engaging part 200 is provided on an inner wall of the trim body 100, and the elastic engaging part 200 may be a trim elastically deformed perpendicular to an axis of the trim body 100, from a center of the trim body 100 towards a peripheral direction, and also be elastically deformed in an axis direction of the trim body 100; a first side surface 210 of the elastic engaging part 200 facing the center of the trim body 100 is configured to abut against the lamp body outer wall 502, and a second side surface 220 of the elastic engaging part 200 facing an opening portion of the trim body 100 is configured to abut against an installation convex edge 501 of the lamp body 50; the inner wall of the trim body 100 is further provided with an engagement groove which is located between the elastic engaging part 200 and the opening portion of the trim body 100; the engagement ring 300 may be partially snapped into the engagement groove, the engagement ring 300 is configured to abut against the installation convex edge 501, and the installation convex edge 501 is located between the elastic engaging part 200 and the engagement ring 300.

[0029] It should be noted that some common structures of lamp body 50 may be provided with the lamp body outer wall 502 in a bowl shape and the installation convex edge 501 located at the periphery of the light-emitting end face. A manner of using the lamp trim provided in the present disclosure may be as follows: when the lamp body 50 is installed, as the inner wall of the trim body 100 is provided with the elastic engaging part 200, and the lamp body outer wall 502 is in a bowl shape, in the process of mounting the lamp body 50 into the trim body 100, the first side surface 210 of the elastic engaging part 200 facing the center of the trim body 100 may abut against the lamp body outer wall 502; moreover, along with the mounting-in process of the lamp body 50, the elastic engaging part 200, subjected to an extrusion force from the lamp body outer wall 502, will be elastically deformed from the center of the trim body 100 towards the peripheral direction; moreover, when the lamp body 50 is mounted to a position where the installation convex edge 501 of the lamp body abuts against the second side surface 220 of the elastic engaging part 200 oriented towards the opening portion of the trim body 100, the installation convex edge 501 of the lamp body 50 is still in

a position shielding the engagement groove, then pressure is continuously applied to the lamp body 50, the elastic engaging part 200 is compressed to elastically deform towards a direction away from the opening portion of the trim body 100, until the engagement groove is completely exposed, thereby the engagement ring 300 is mounted to the engagement groove in a snap-fit manner, and after the snapping is completed, an outer diameter position of the engagement ring 300 is located inside the engagement groove, and an inner diameter position of the engagement ring 300 is located outside the engagement groove, thus enabling the installation convex edge 501 to be snapped between the elastic engaging part 200 and the engagement ring 300.

[0030] In addition, after the lamp body and the lamp trim are assembled into one piece, the lamp body is embedded in hole sites at installation positions, and when the lamp body needs to be replaced due to an objective factor (for example, damage or failure of the lamp body) or a subjective human factor, the lamp body may be taken down and replaced only by taking the engagement ring out of the engagement groove, without disassembling or assembling the lamp trim, thus the operation is simple and convenient.

[0031] Therefore, compared with some other installation structures of lamp, after the lamp trim provided in the present disclosure and the lamp body are assembled into one piece, the lamp body is subjected to an elastic acting force in a direction perpendicular or parallel to the axis of the lamp body, so that reliable fixation of the lamp body can be ensured; moreover, due to the elastic deformation of the elastic engaging part, the lamp trim is applicable to lamp bodies having lamp body outer walls of different diameters or lamp bodies having installation convex edges of different thicknesses; the problem that some other installation structures of lamp merely can match the lamp body of one size is solved, only a few types of lamp trims need to be produced, and can be universally used for lamp bodies of most sizes, thus it can facilitate processing and production as well as inventory management, and save the cost.

[0032] In addition, as a possible implementation, referring to FIG. 2 and FIG. 3 in combination, the elastic engaging part 200 may include a plurality of elastic engaging arms circumferentially arranged at intervals along the inner wall of the trim body 100, each elastic engaging arm may include a first end and a second end opposite to each other, wherein the first end may be fixedly connected with the inner wall of the trim body 100, the second end may suspend and extend towards the center of the trim body 100, and the second end may be bent towards the opening portion of the trim body 100.

[0033] In this way, the second end of each elastic engaging arm extends towards the center of the trim body, ensuring that the lamp body outer wall can be subjected to an elastic acting force after the lamp body is installed, and the first end of each elastic engaging arm is fixedly connected with the inner wall of the trim body, so that the

elastic engaging arm is matched with the engagement ring so as to tightly snap the installation convex edge, thus ensuring that the lamp trim is applicable to lamp body outer walls having different diameters and installation convex edges having different thicknesses, and meanwhile, reliable fixed installation of the lamp body further can be ensured; in addition, a plurality of elastic engaging arms are circumferentially provided at intervals on the inner wall of the trim body, then the lamp body outer wall can be subjected to an elastic acting force all around, such that the lamp body outer wall is subjected to a uniform circumferential force, thus ensuring that the lamp body can be placed at the center of the lamp trim after being mounted, and guaranteeing an aesthetically pleasant appearance.

[0034] Moreover, referring to FIG. 1 again, as a possible implementation, the engagement groove may include a plurality of engagement holes 121 circumferentially provided at intervals along the inner wall of the trim body 100; a plurality of snap-fit portions 310 are circumferentially provided on the engagement ring 300 at intervals, each snap-fit portion 310 protrudes towards a direction away from the center of the engagement ring 300, and the plurality of snap-fit portions 310 are respectively snapped into the plurality of engagement holes 121.

[0035] For example, referring to FIG. 1 and FIG. 4 again, as a possible implementation, the snap-fit portions 310 may be bent sections provided on the engagement ring 300, and the bent sections protrude towards a direction away from the center of the engagement ring 300, so that the snap-fit portions 310 are parts belonging to the engagement ring 300, thus they are easy to be processed.

[0036] Evidently, it may be understood that the bent sections on the engagement ring 300 being provided as the snap-fit portions 310 is only exemplary, while in some other possible implementations of the present disclosure, the snap-fit portions 310 may also be provided according to some other implementations, for example, bumps oriented towards the direction away from the center of the engagement ring 300 may also be provided on the engagement ring 300 as the snap-fit portions 310, as long as the snap-fit portions 310 provided on the engagement ring 300 may cooperate with the engagement holes 121, and may snap the engagement ring 300 into the engagement groove, the implementation of the snap-fit portions 310 is not limited in the present disclosure.

[0037] In the above, in an embodiment, the engagement ring 300 may be made of an elastic material, and due to its elastic deformation, the snap-fit portions 310 may be correspondingly snapped into the engagement holes 121, such that the engagement ring 300 is partially snapped in the engagement groove; in addition, apart from the plurality of snap-fit portions 310, remaining portions of the engagement ring 300 may cooperate with the elastic engaging part 200 outside the engagement groove, so that the installation convex edge 501 is snap-fitted. The engagement ring 300 is simple in structure,

convenient in processing and production, and low in cost.

[0038] Moreover, please referring to FIG. 1 again, as a possible implementation, the engagement ring 300 may be provided with a fracture, and two ends of the engagement ring 300 are bent from the fracture position to the center position of the engagement ring 300 and extend to become operation portions 320. In the above, the fracture structure provided can facilitate disassembling and assembling operations of the engagement ring 300 after elastic deformation (for example, reducing the diameter of the engagement ring 300), and by compressing the operation portions 320 at two ends of the engagement ring 300 from a separated state to an abutment state, the diameter of the engagement ring 300 is reduced to perform the disassembling and assembling operations. Thus, the disassembling and assembling operations to the engagement ring can be conveniently performed, so that the lamp body can be conveniently disassembled, assembled and replaced, and the replacing efficiency of the lamp body is improved.

[0039] In addition, as a possible implementation, when the engagement ring 300 is provided with the fracture, a positioning portion and a fastening portion may be respectively provided at two ends of the engagement ring 300, so that the two ends of the engagement ring may be in snap-fit connection by cooperation between the positioning portion and the fastening portion. In this way, the engagement ring also can be conveniently disassembled and assembled.

[0040] Referring to FIG. 1 or FIG. 2 again, as a possible implementation, the trim body 100 may include an inner ring 120 and an outer ring 110; wherein the inner ring 120 may be configured to be sleeved on the lamp body outer wall 502, and both the elastic engaging part 200 and the engagement groove may be arranged on the inner wall of the inner ring 120; the outer ring 110 may be sleeved on the outer wall of the inner ring 120, and the outer ring 110 may be configured to be embedded into, for example, a wall or a ceiling.

[0041] In this way, when mounting the lamp body 50, first, the lamp body outer wall 502 may be pushed into the inner ring 120 until the installation convex edge 501 of the lamp body 50 abuts against the elastic engaging part 200 provided on the inner wall of the inner ring 120; then, the engagement ring 300 is snapped into the engagement groove, and a portion of the engagement ring 300 located outside the engagement groove (an outer diameter portion of the engagement ring 300 is snapped into the engagement groove, and an inner diameter portion of the engagement ring is located outside the engagement groove) abuts against the light-emitting end face of the lamp body outer wall 502, so that the installation convex edge 501 of the lamp body 50 is snapped between the elastic engaging part 200 and the engagement ring 300, realizing fixation and mounting of the lamp body 50; after the lamp body 50 is mounted, the outer ring 110 is embedded into the installation holes at the installation positions.

[0042] In the above, referring to FIG. 2 again, as a possible implementation, the inner ring 120 may be in rotational connection with the outer ring 110, and a rotation axis of the inner ring 120 is perpendicular to a central axis of the outer ring 110. The inner ring 120 can adjust an angle of the inner ring 120 along the direction perpendicular to the axis of the outer ring 110, thus the illuminating angle can be adjusted after the lamp body 50 is mounted.

[0043] Thus, compared with some other lamp installation structures, in the lamp trim provided in the present disclosure, by sleeving the outer ring on the inner ring, and mounting the lamp body outer wall on the inner ring, after the outer ring is embedded into, for example, a wall or a ceiling, by taking the axis direction of the inner ring perpendicular to the outer ring as the rotational direction of the inner ring, the inner ring is enabled to rotate in this rotational direction, the illuminating direction of the lamp body can be adjusted, thus the structure is simple, and it is convenient to adjust the illuminating angle.

[0044] As a possible implementation, referring to FIG. 2 again, an inner wall of the outer ring 110 may be provided with two rotating shafts 111 at interval, and axes of the two rotating shafts 111 coincide with each other and pass through the center of the outer ring 110, the side wall of the inner ring 120 may be provided with two shaft holes 122 at interval, and the two shaft holes 122 are respectively in corresponding rotational connection with the two rotating shafts 111.

[0045] By the rotational connection between the rotating shafts and the shaft holes, rotation of the inner ring along a direction perpendicular to the axis of the outer ring can be realized, which is simple in structure, and low in production cost, moreover, the inner ring also can be enabled to rotate along the axis of rotating shaft, thus facilitating the angle adjustment of the lamp body mounted on the inner ring, so as to satisfy demands for different illuminating angle.

[0046] In the above, it should be noted that the rotational connection (fit) between the respective rotating shafts 111 and the shaft holes 122 is close fit, and the inner ring 120 can rotate relative to the outer ring 110 generally by applying a manual force, so as to avoid the phenomenon that the illuminating direction cannot be fixed due to free rotation of the inner ring 120. Evidently, a position block also may be provided on the periphery of each shaft hole 122, and a plurality of positioning grooves corresponding to positions of the positioning blocks are provided on the periphery of each rotating shaft 111, so as to realize positional fixation of the inner ring 120 after it is rotated to a target angle.

[0047] In addition, as a possible implementation, the elastic engaging part 200, the engagement groove and the inner ring 120 may be an integrally molded structure, the processing and production process of which is simple and has a low cost.

[0048] In addition, as a possible implementation, referring to FIG. 5 to FIG. 11 in combination, in an embodi-

ment, the inner wall of the outer ring 110 may be provided with a plurality of limit grooves 112, wherein the plurality of limit grooves 112 are distributed in a sector shape on the periphery of one of the rotating shafts 111; the outer wall of the inner ring 120 may be further provided with a position block 123, wherein the position block 123 may be configured to be snap-fitted with one of the limit grooves 112.

[0049] Thus, after the inner ring is rotated to a desired angle, the position block may be snapped into a corresponding limit groove, so as to fix the angle of the inner ring, and prevent free rotation of the inner ring from causing change of the illuminating angle.

[0050] As a possible implementation, referring to FIG. 5 and FIG. 6 in combination, in an embodiment, peripheries of each of the two rotating shafts 111 may be provided with a plurality of limit grooves 112, the outer wall of the inner ring 120 may be provided with two position blocks 123 at interval, and the two position blocks 123 may be respectively configured to be snap-fitted with the limit grooves 112 located on the peripheries of the two rotating shafts 111. Thus, after the inner ring is rotated to a desired angle, by snapped positioning at the two positions, reliable fixation of the inner ring can be better ensured, and the illuminating angle is prevented from being changed under non-artificial conditions.

[0051] As a possible implementation, referring to FIG. 7 and FIG. 8, in an embodiment, the opening portion of each limit groove 112 may be provided with first round corners 1121; and an end of each position block 123 snapped into the respective limit groove 112 may be provided with second round corners 1231.

[0052] Thus, in the process that the inner ring rotates relative to the outer ring, the position block can enter respective limit grooves in turn, until the inner ring is rotated to a target angle, the arrangement of the first round corners and the second round corners can avoid the situation that the position blocks being locked with the respective limit grooves and that the inner ring being unable to rotate, thus ensuring that the position blocks and the limit grooves can realize the positioning function, without affecting manually rotating the inner ring so as to adjust the illuminating angle.

[0053] Besides, as another possible implementation, referring to FIG. 9 and FIG. 10, in an embodiment, each limit groove 112 may be in a V-shaped structure, the limit groove 112 may be provided with a first resisting surface 1122, and position block 123 may be provided with a second resisting surface 1232; when the position block 123 cooperates with the limit groove 112 so as to realize the positioning function, the first resisting surface 1122 is in surface contact with the second resisting surface 1232, so that when the position block 123 cooperates with the limit groove 112 to adjust an illuminating angle, the position block 123 is elastic, moreover, the position block 123 and the limit groove 112 are in surface friction, thus the friction loss can be reduced when the position block moves between different limit grooves 112.

[0054] Moreover, as a possible implementation, the outer ring 110, the limit grooves 112 and the rotating shafts 111 may be integrally molded, and the inner ring 120, the position blocks 123 and the shaft holes 122 may be integrally molded. The integral molding and processing is simple in process, convenient in production, and low in manufacturing cost.

[0055] As a possible implementation, the present disclosure further provides a lamp module. Referring to FIG. 4, the lamp module may include a lamp body 50 and the above-described lamp trim 10, wherein the lamp trim 10 is sleeved on the lamp body outer wall 502 of the lamp body 50.

[0056] After application of the above lamp trim, compared with some other lamp modules, the lamp body is subjected to an elastic acting force in directions perpendicular or parallel to the axis of the lamp body, so that reliable fixation of the lamp body can be ensured; moreover, due to the elastic deformation of the elastic engaging part, the lamp trim is applicable to lamp bodies having lamp body outer walls of different diameters or lamp bodies having installation convex edges of different thicknesses; the problem in some other lamp modules that one type of lamp trim can merely match one type of lamp body is solved, only a few types of lamp trims need to be produced, and can be universally used for lamp bodies of most sizes, thus it can facilitate processing and production as well as inventory management, and save the cost.

[0057] Finally, it should be noted that the above-mentioned are merely part of the embodiments of the present disclosure, rather than being intended to limit the present disclosure. While the detailed description is made to the present disclosure with reference to the preceding embodiments, those skilled in the art should understand that they still could modify the technical solutions described in various preceding embodiments, or make equivalent substitutions to some of the technical features therein. Any modifications, equivalent substitutions, improvements and so on, within the spirit and principle of the present disclosure, should be covered within the scope of protection of the present disclosure.

Industrial Applicability

[0058] After the lamp trim provided in the present disclosure is integrally assembled with the lamp body, as the lamp body is subjected to the elastic acting force in the directions perpendicular or parallel to the axis of the lamp body, reliable fixation of the lamp body can be ensured; moreover, due to the elastic deformation of the elastic engaging part, the lamp trim is applicable to lamp bodies having lamp body outer walls of different diameters or lamp bodies having installation convex edges of different thicknesses; the problem that some other installation structures of lamp merely can match the lamp body of one size is solved, only a few types of lamp trims need to be produced, and can be universally used for lamp

bodies of most sizes, thus it can facilitate processing and production as well as inventory management, and save the cost.

Claims

1. A lamp trim (10), **characterized by** comprising:

a trim body (100), configured to be sleeved on a lamp body outer wall of a lamp body;
 an elastic engaging part (200), provided on an inner wall of the trim body (100), wherein the elastic engaging part (200) is elastically deformable perpendicularly to an axis of the trim body (100), from a center of the trim body (100) towards a peripheral direction of the trim body (100), and is also elastically deformable in an axis direction of the trim body (100); a first side surface (210) of the elastic engaging part (200) facing the center of the trim body (100) is configured to abut against the lamp body outer wall (502), and a second side surface (220) of the elastic engaging part (200) facing an opening portion of the trim body (100) is configured to abut against an installation convex edge (501) of the lamp body (50); the inner wall of the trim body (100) is further provided with an engagement groove which is located between the elastic engaging part (200) and the opening portion of the trim body (100); and
 an engagement ring (300), snapped into the engagement groove, wherein the engagement ring (300) is configured to abut against the installation convex edge (501), and the installation convex edge (501) is located between the elastic engaging part (200) and the engagement ring (300).

2. The lamp trim (10) according to claim 1, wherein the elastic engaging part (200) comprises a plurality of elastic engaging arms circumferentially arranged at intervals along the inner wall of the trim body (100), each of the elastic engaging arms comprises a first end and a second end opposite to each other, the first end is fixedly connected with the inner wall of the trim body (100), the second end suspends and extends towards the center of the trim body (100), and the second end is bent towards the opening portion of the trim body (100).

3. The lamp trim (10) according to claim 1 or 2, wherein the engagement groove is formed by a plurality of engagement holes (121) circumferentially provided at intervals along the inner wall of the trim body (100); and
 a plurality of snap-fit portions (310) are circumferentially provided on the engagement ring (300) at in-

tervals, each of the snap-fit portions (310) protrudes towards a direction away from the center of the engagement ring (300), and the plurality of snap-fit portions (310) are respectively snapped into a plurality of the engagement holes (121).

4. The lamp trim (10) according to claim 3, wherein the snap-fit portions (310) are bent sections provided on the engagement ring (300), and the bent sections protrude towards the direction away from the center of the engagement ring (300).

5. The lamp trim (10) according to any one of claims 1-4, wherein the engagement ring (300) is provided with a fracture, and two ends of the engagement ring (300) are bent from the fracture towards the center of the engagement ring (300) and extend to serve as operation portions (320).

6. The lamp trim (10) according to any one of claims 1-4,
 wherein the engagement ring (300) is provided with an end port, and a positioning portion and a fastening portion are respectively provided at two ends of the engagement ring (300);
 wherein the positioning portion cooperates with the fastening portion so that the two ends of the engagement ring (300) are in snap-fit connection.

7. The lamp trim (10) according to any one of claims 1-6, wherein the trim body (100) comprises:

an inner ring (120), configured to be sleeved on the lamp body outer wall (502), wherein both the elastic engaging part (200) and the engagement groove are arranged on the inner wall of the inner ring (120); and
 an outer ring (110), sleeved on the outer wall of the inner ring (120), wherein the outer ring (110) is further configured to be embedded into a wall or a ceiling.

8. The lamp trim (10) according to claim 7, wherein the inner ring (120) is in rotational connection with the outer ring (110), and a rotation axis of the inner ring (120) is perpendicular to a central axis of the outer ring (110).

9. The lamp trim (10) according to claim 8, wherein an inner wall of the outer ring (110) is provided with two rotating shafts (111) at interval, and axes of the two rotating shafts (111) coincide with each other and pass through the center of the outer ring (110); and
 the side wall of the inner ring (120) is provided with two shaft holes (122) at interval, and the two shaft holes (122) are respectively in rotational connection with the two corresponding rotating shafts (111).

10. The lamp trim (10) according to claim 9, wherein the inner wall of the outer ring (110) is provided with a plurality of limit grooves (112), and the plurality of limit grooves (112) are distributed in a sector shape on a periphery of one of the rotating shafts (111); and the outer wall of the inner ring (120) is provided with a position block (123), wherein the position block (123) is configured to be snap-fitted with one of the limit grooves (112). 5
11. The lamp trim (10) according to claim 10, wherein peripheries of the two rotating shafts (111) are each provided with a plurality of limit grooves (112), the outer wall of the inner ring (120) is provided with two position blocks (123) at interval, and the two position blocks (123) are respectively configured to be snap-fitted with the respective limit grooves (112) located on the peripheries of the two rotating shafts (111). 10
12. The lamp trim (10) according to claim 10 or 11, wherein an opening portion of each of the limit grooves (112) is provided with first round corners (1121); and an end of each position block (123), with the end being snapped into the respective limit groove (112), is provided with second round corners (1231). 15
13. The lamp trim (10) according to any one of claims 9-12, wherein the outer ring (110), the limit grooves (112) and the rotating shafts are integrally molded; and the inner ring (120), each position block (123) and the shaft holes (122) are integrally molded. 20
14. The lamp trim (10) according to any one of claims 7-12, wherein the elastic engaging part (200), the engagement groove and the inner ring (120) are in an integrally molded structure. 25
15. A lamp module, **characterized by** comprising a lamp body (50) and the lamp trim (10) according to any one of claims 1-14, wherein the lamp trim (10) is sleeved on the lamp body outer wall (502) of the lamp body (50). 30

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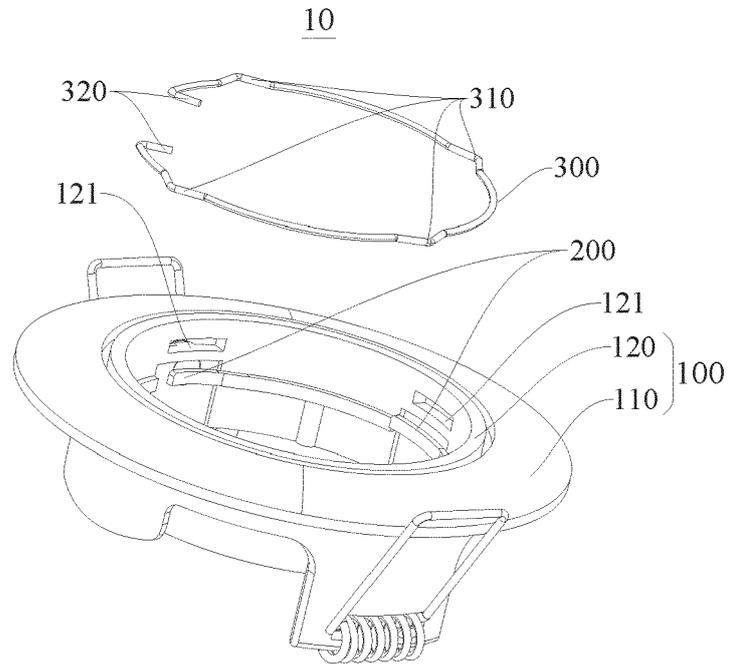


FIG. 1

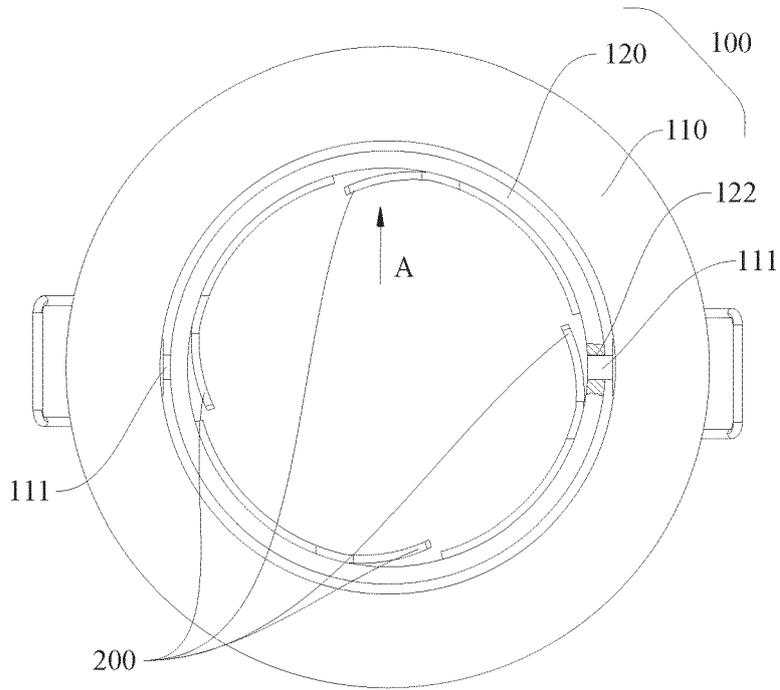


FIG. 2

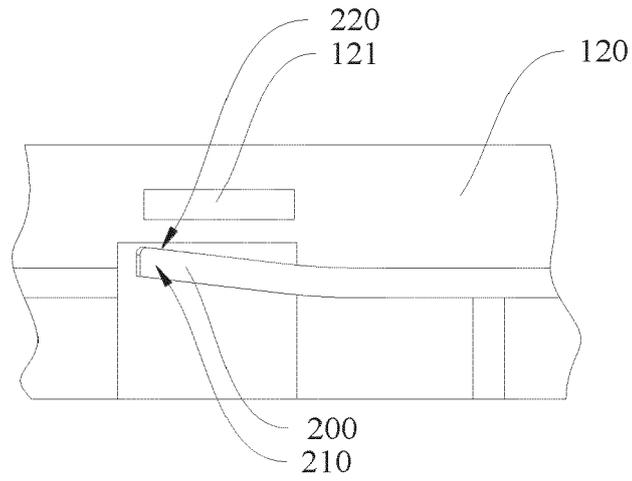


FIG. 3

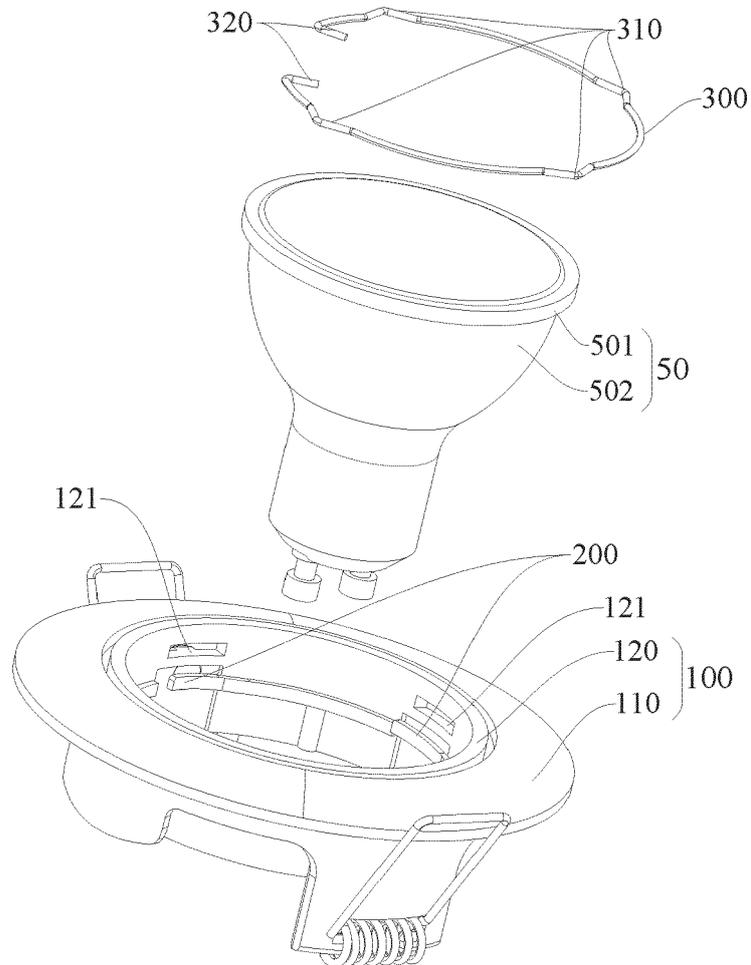


FIG. 4

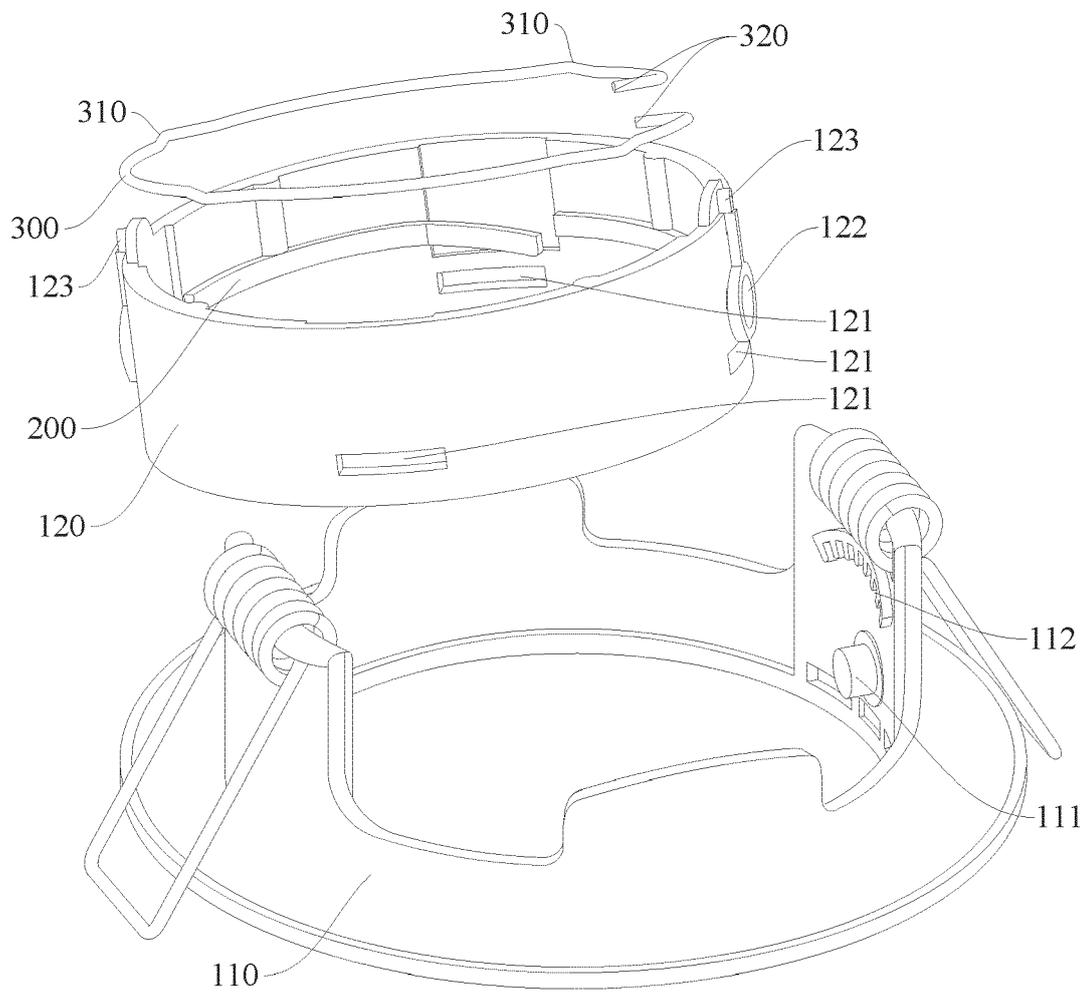


FIG. 5

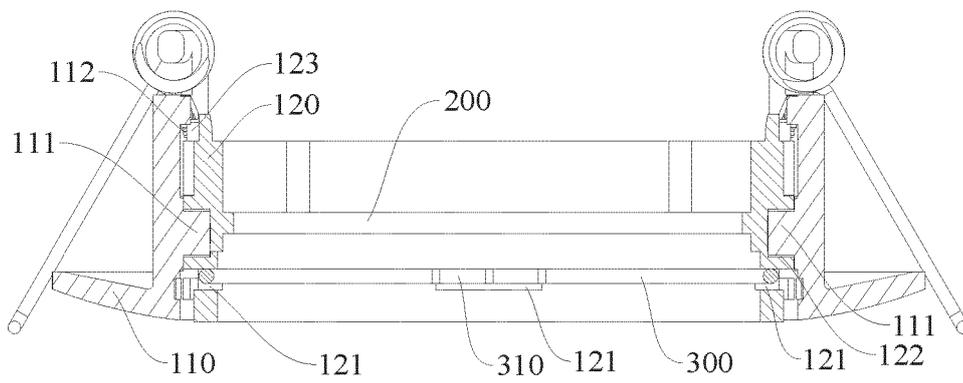


FIG. 6

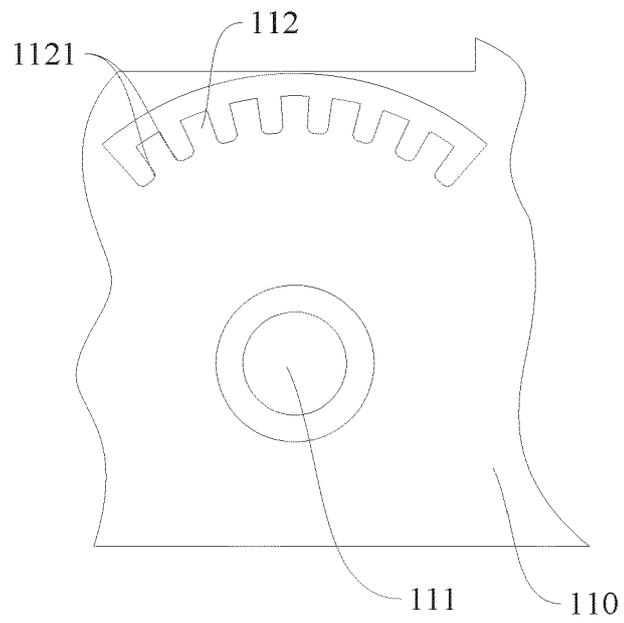


FIG. 7

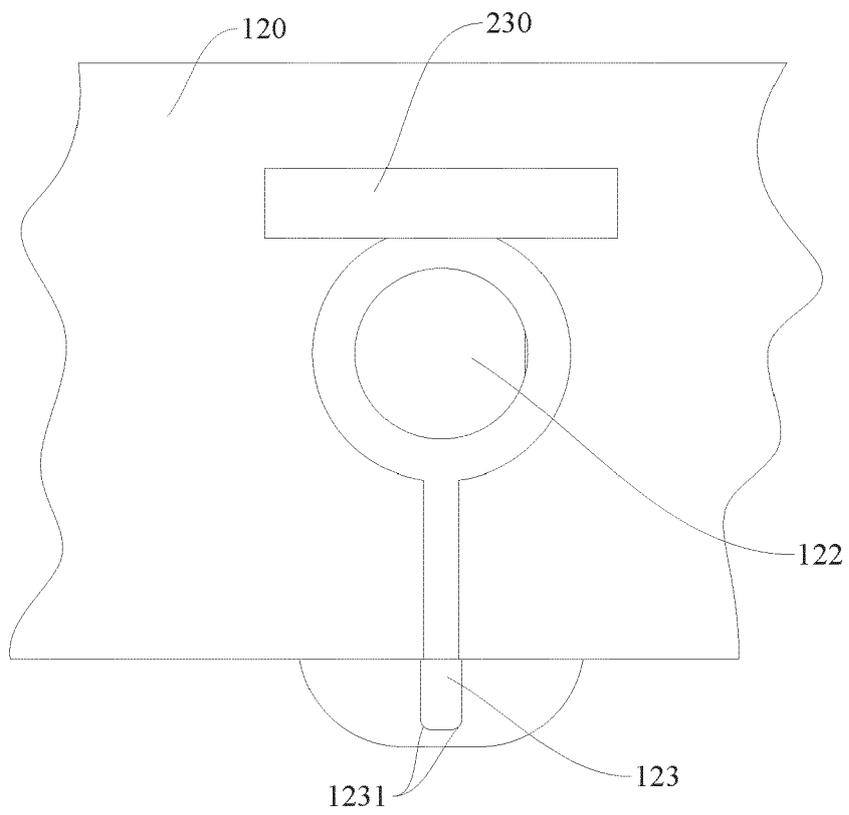


FIG. 8

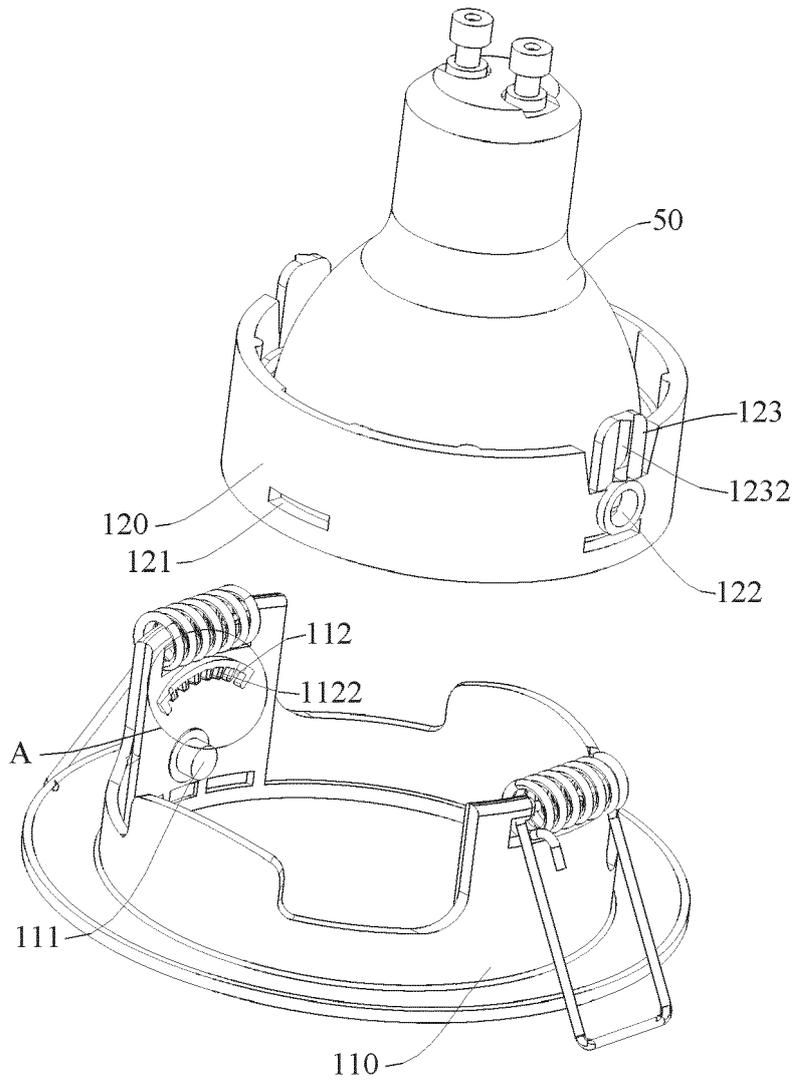


FIG. 9

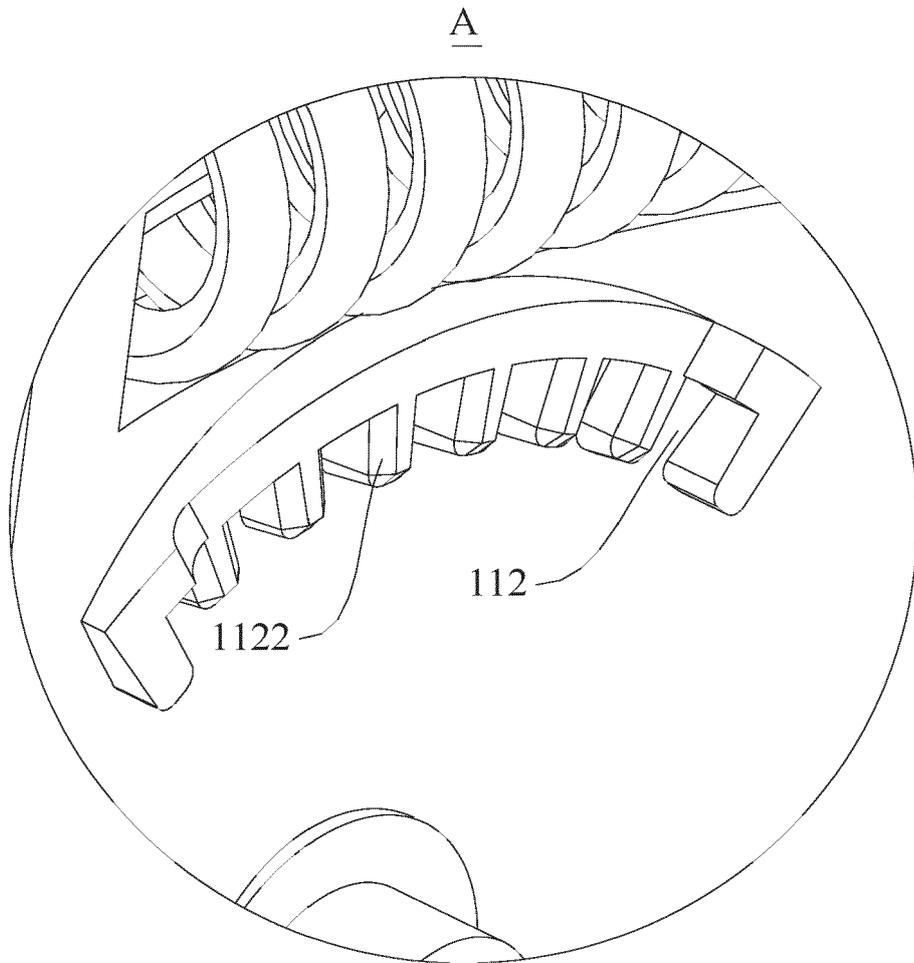


FIG. 10

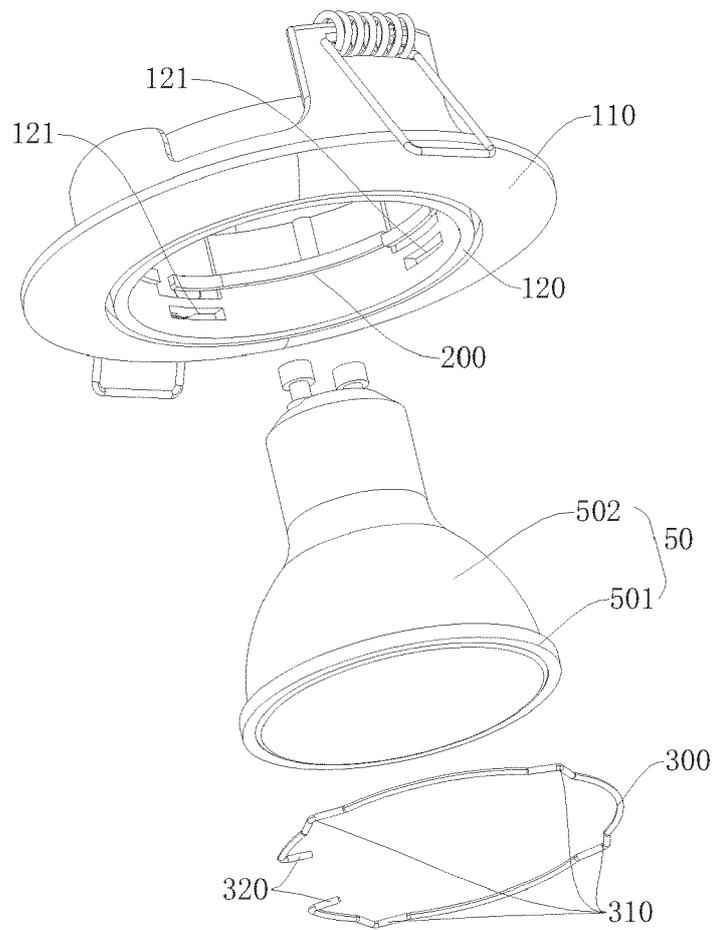


FIG. 11

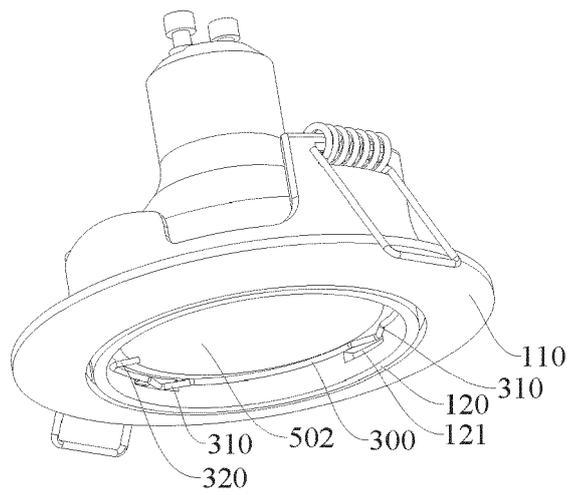


FIG. 12



EUROPEAN SEARCH REPORT

Application Number
EP 20 18 1500

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Y	* paragraphs [0038] - [0061]; figures 1-3	3,4, 10-14	F21V19/00 F21V21/04
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	* column 6, lines 9-55; figures 9-11 *		

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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		13 November 2020	Thibaut, Arthur
CATEGORY OF CITED DOCUMENTS			
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